FirstNet Solution Overview

Brian Maholic

Principal Consultant, AT&T Outreach
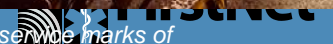
FirstNet Update Overview

Introductions

FirstNet History

Investment and Sustainability

Coverage and Support

Brian Maholic

FirstNet Principal Consultant
State of Arizona
Brian.maholic@att.com
615.495.3923

- **8+ years Public Safety Communications**
  - Solutions Engineering – Tennessee
    - City of Chattanooga – Simulcast Project 25 Network
    - City of Franklin – Simulcast Project 25 Network
    - State of Tennessee – Project 25 Network
    - City of Nashville – Multi Layer Simulcast Project 25 Network
  - Engineering Manager – Texas
    - Managed engineering team responsible for State of Texas, City of Austin, Harris County, Texas/Mexico Border
- **2 years with Kodiak Networks**
  - Lead on Network Interoperability with Land Mobile network
  - AT&T Strategy Director for Interoperability and LTE PTT

FirstNet Supporting Team – Arizona

Amos Chalmers

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Tara Brewer

Arizona
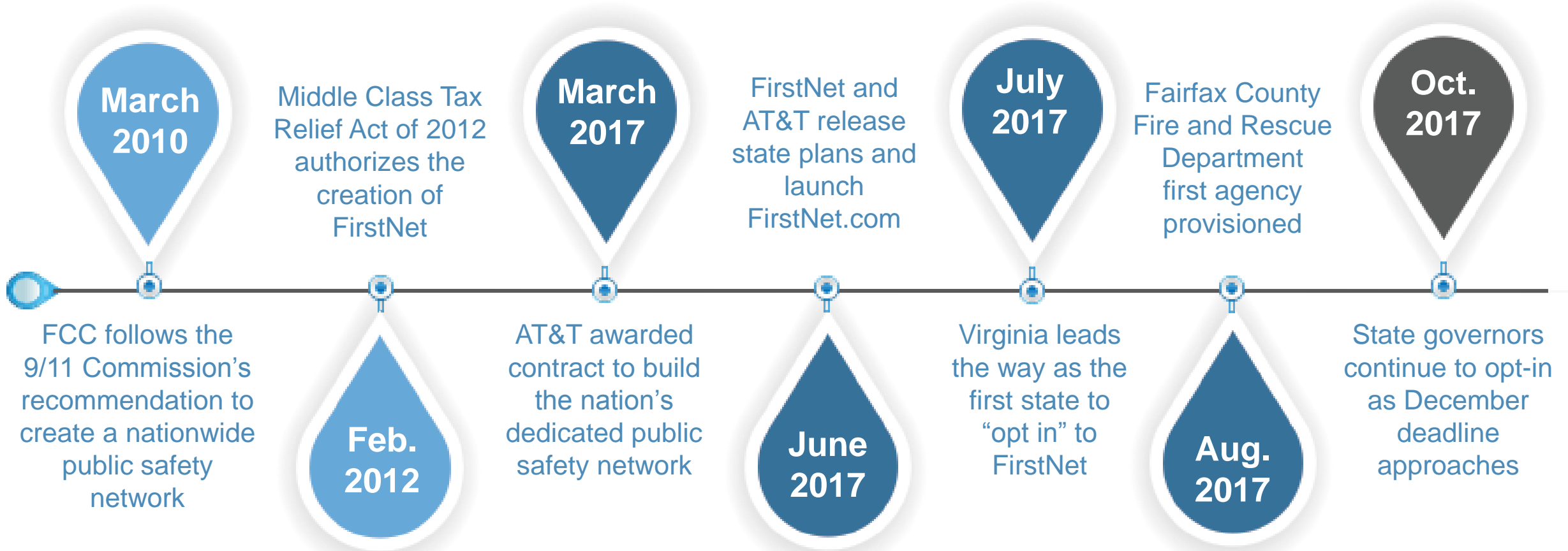FirstNet Consultant
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Tracy Cooper

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Additionally:

- FirstNet Authority
- Radio Access Network Engineering – In-building and Macro Sites
- Sales Support
- Partners and Partner Support

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History in the Making – FirstNet

March 2010

Middle Class Tax Relief Act of 2012 authorizes the creation of FirstNet

March 2017

FirstNet and AT&T release state plans and launch FirstNet.com

July 2017

Fairfax County Fire and Rescue Department first agency provisioned

Oct. 2017

FCC follows the 9/11 Commission's recommendation to create a nationwide public safety network

Feb. 2012

AT&T awarded contract to build the nation's dedicated public safety network

June 2017

Virginia leads the way as the first state to "opt in" to FirstNet

Aug. 2017

State governors continue to opt-in as December deadline approaches
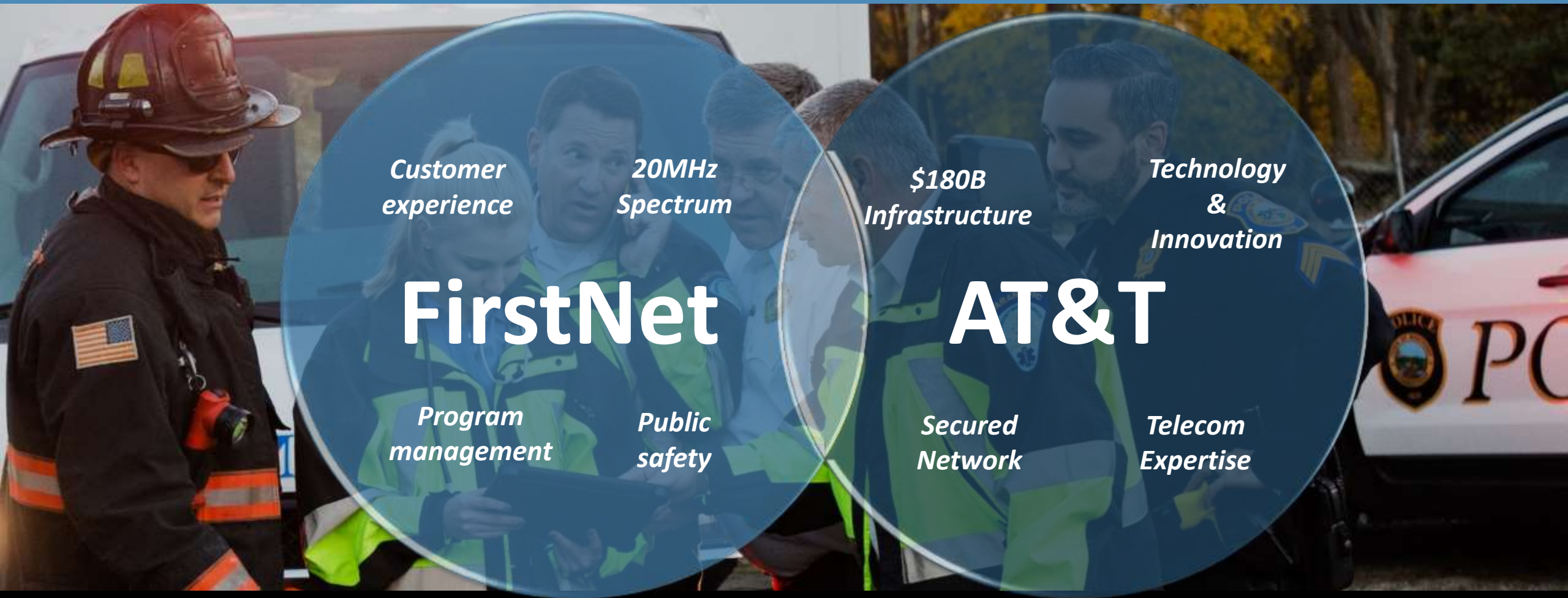
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Agencies in Support of FirstNet

National Organization of Black Law Enforcement Executives

National Governors Association

National Association of Counties

National League of Cities

United States Conference of Mayors

Council of State Governments

International City/County Managers Association

National Conference of State Legislators

International Association of Chiefs of Police

International Association of Fire Chiefs

National Troopers Coalition

National Sheriff's Association

Major Cities Chief's Association

Metropolitan Fire Chiefs Association

Major County Sheriff's Association

Association of Public Safety Communications Officials

National Emergency Management Association

International Association of Emergency Managers

Police Executive Research Forum

National Criminal Justice Association

National Association of Police Organizations

National Volunteer Fire Council

Association of Air Medical Services

Advocates for Emergency Medical Services

Emergency Nurses Association

National Association of EMS Physicians

National Association of Emergency Medical Technicians

National Association of State EMS Officials

National EMS Management Association

American Probation and Parole Association

National Associations of Regional Councils

Innovative Public-Private Partnership

Customer experience

20MHz Spectrum

$180B Infrastructure

Technology & Innovation

FirstNet

AT&T

Program management

Public safety

Secured Network

Telecom Expertise

Creating an infrastructure dedicated to public safety

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Spending on FirstNet

$40B Spending
on FirstNet

$6.5B in success-based
FirstNet funding

Access to existing $180B
AT&T Network

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Public Safety Priorities

Delivering on what public safety asked for

- **Public safety always gets priority**

- **Highly secure network to meet public safety's data requirements**

- **Controlled access by public safety agencies for their users**

- **Exclusive, well-vetted content**

- **Coverage where public safety operates**

- **Enhanced user experience**

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Core FirstNet Solution Design Principles

- **Listen to public safety** – Customers drive our solutions

- **Deliver fast time to market** – Meet Public Safety needs today and tomorrow

- **Focus on priority** – first responders' access to the network is central to what we do

- **Economies of scale** – make it standards based and interoperable

- **Public safety grade** - FirstNet's end to end 99.99% network availability objective and deliver best in breed security and features

- **Earn public safety's business** – FirstNet is platform designed for Public Safety; we are proud to compete and win every public safety entity's trust

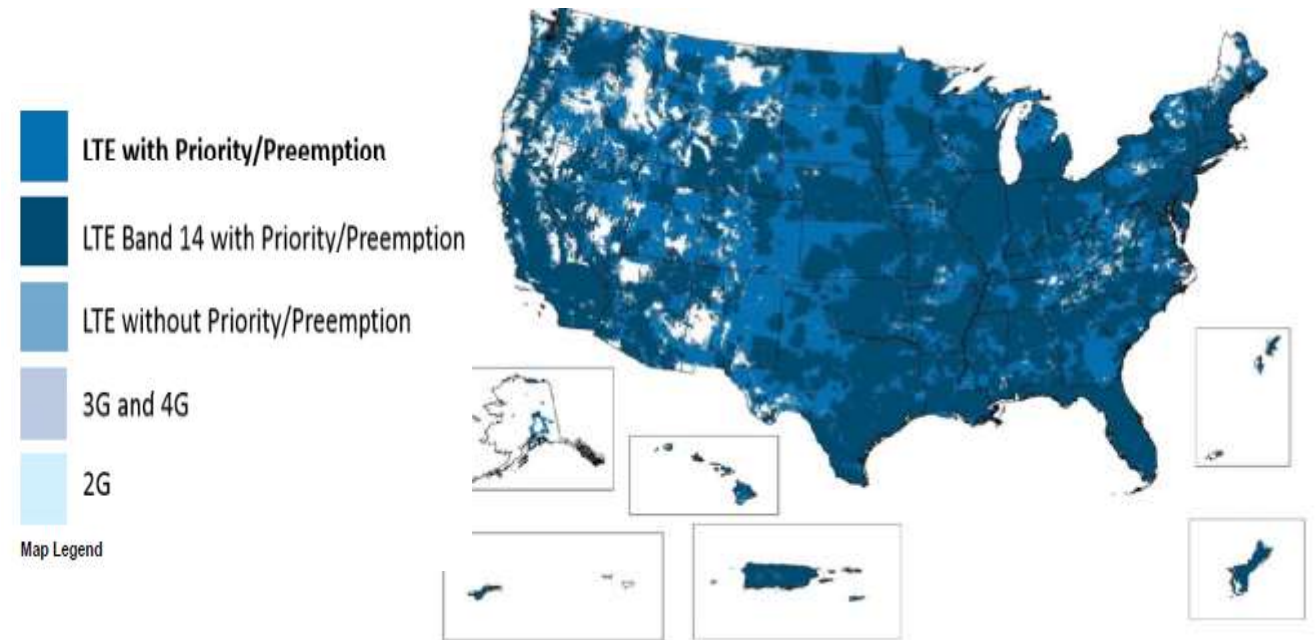**FirstNet**™

Benefits of FirstNet: Coverage & Expansion

At the foundation of our technology is is one of the world's most advanced global network service providers - AT&T:

- Covers more than **99 percent** of the U.S. population

- Carries over **150 petabytes** of data traffic on an average business day with **99.9 percent reliability**.

## Increased coverage

Major expansion in rural areas is one of the pillars of the FirstNet mission. The resulting network will offer unparalleled nationwide coverage to first responders where they need it most.

FirstNet Outdoor Coverage - 2022 Capability

LTE with Priority/Preemption

LTE Band 14 with Priority/Preemption

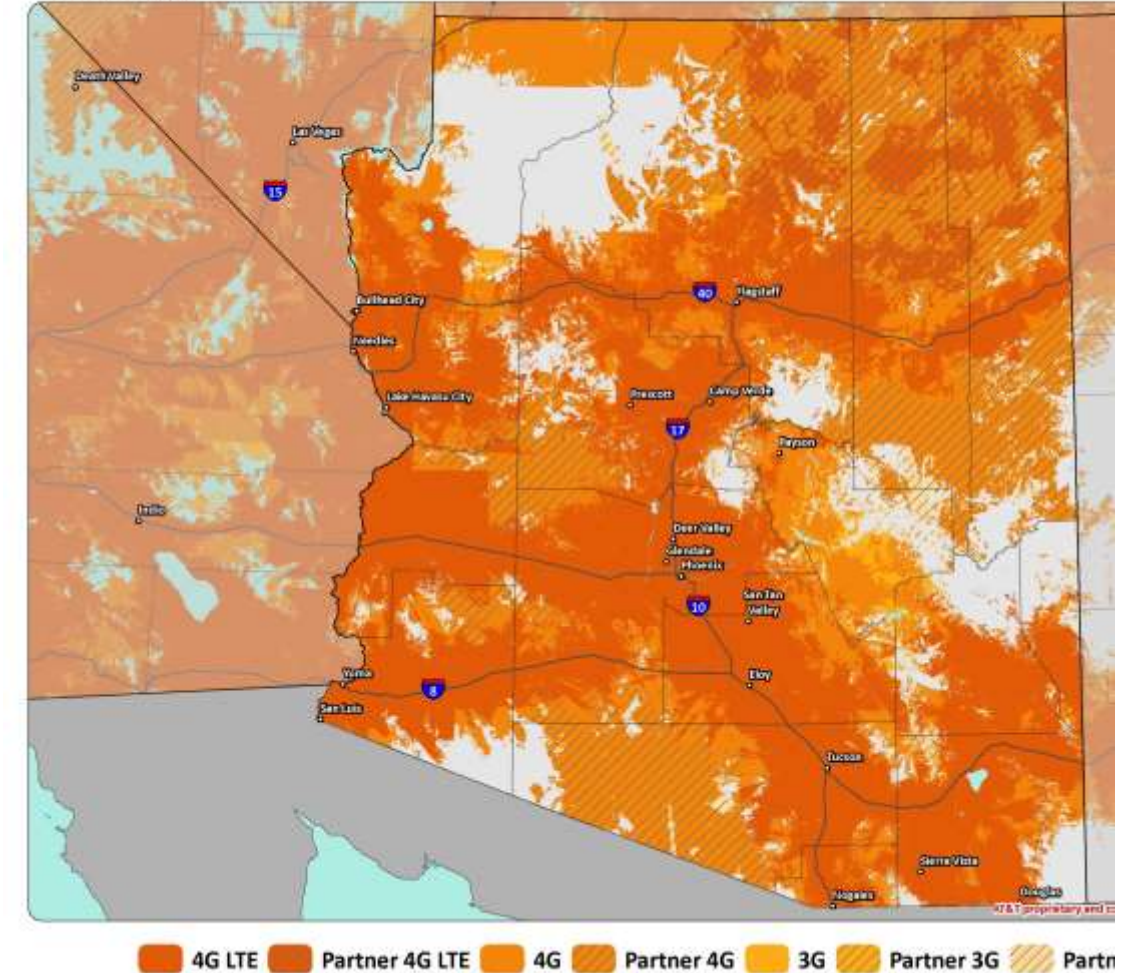LTE without Priority/Preemption

3G and 4G

2G

Map Legend

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AT&T Coverage – 4 Years Ago & Today - $500 Million Investment in Arizona

AT&T Network Coverage of Arizona: EOY 2013

Legend: 4G LTE | 4G | 3G | 2G | Partner 2G (1Q 2013)
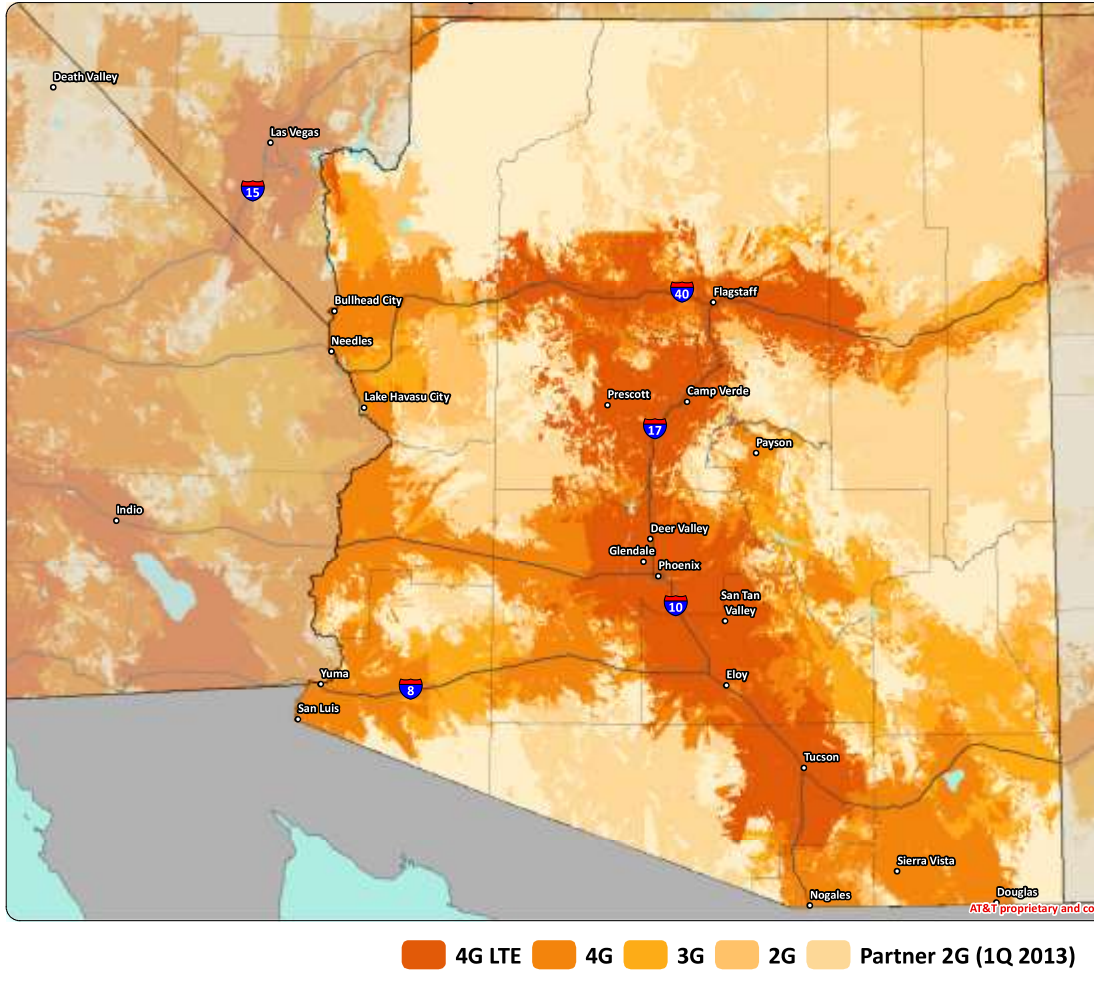
AT&T Network Coverage of Arizona
End of July 2017

Legend: 4G LTE | Partner 4G LTE | 4G | Partner 4G | 3G | Partner 3G | Partn...

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What Is QPP, and Why Does Public Safety Need It?

- QPP – QoS – Priority - Preemption

- **Q**uality of Service (QoS): establishes minimum/maximum service quality parameters

- **P**riority: Gives users preferred access to network resources

- **P**reemption: Terminates or relocates lower priority users to provide primary users with access

FirstNet Priorities – Core Infrastructure

FirstNet launches ruthless-preemption functionality for 'primary' public-safety subscribers

Donny Jackson | *Urgent Communications*

Dec 12, 2017

FirstNet Launches Ruthless Preemption for First Responders

Home / Newsroom / Press Releases » FirstNet Launches Ruth ...

FOR IMMEDIATE RELEASE:
December 12, 2017

News Media Contact:
April Ward (202) 853-5219 or (571) 665-6187

Dedicated FirstNet core supporting preemptive capabilities.

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Key Solution Elements

FirstNet Solution Overview

Coverage

Reaches 99+% of US population

40,000 Wi-Fi hotspots

Satellite and deployable coverage for 99% geographic reach

In-Building Solutions

Access to more than 6,000 existing AT&T in-building assets including stadiums and transportation facilities

Deployables

Hundreds of AT&T units for daily network maintenance

72 deployables for FirstNet customer requests

Customer-deployable asset options

Service Plans & Procurement

Competitive rate plans at or below existing commercial pricing

Purchase through a variety of contract vehicles

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Benefits of FirstNet: In-Building Solutions

We currently have over 6,000 distributed antenna systems in large public venues and buildings across the U.S.. This solution improves wireless service within concrete and steel buildings - delivering enhanced connectivity, capacity, and coverage where an unassisted network signal would typically not reach.

Our LTE Distributed Antenna Systems will:

- support priority and preemption
- provide full access to our network, and
- provides added security and safety for citizens and first responders alike.

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FirstNet Solution Overview

Devices & BYOD

Any AT&T LTE device can be a FirstNet device

Wide choices, aggressive pricing

Use your personal device on FirstNet

Basic & Future Services

Includes all the voice, data and messaging features of commercial networks

Future roadmap for Mission Critical services

Priority/Preemption

Priority and preemption on Band 14 + AT&T commercial LTE bands

Multiple priority levels within agencies
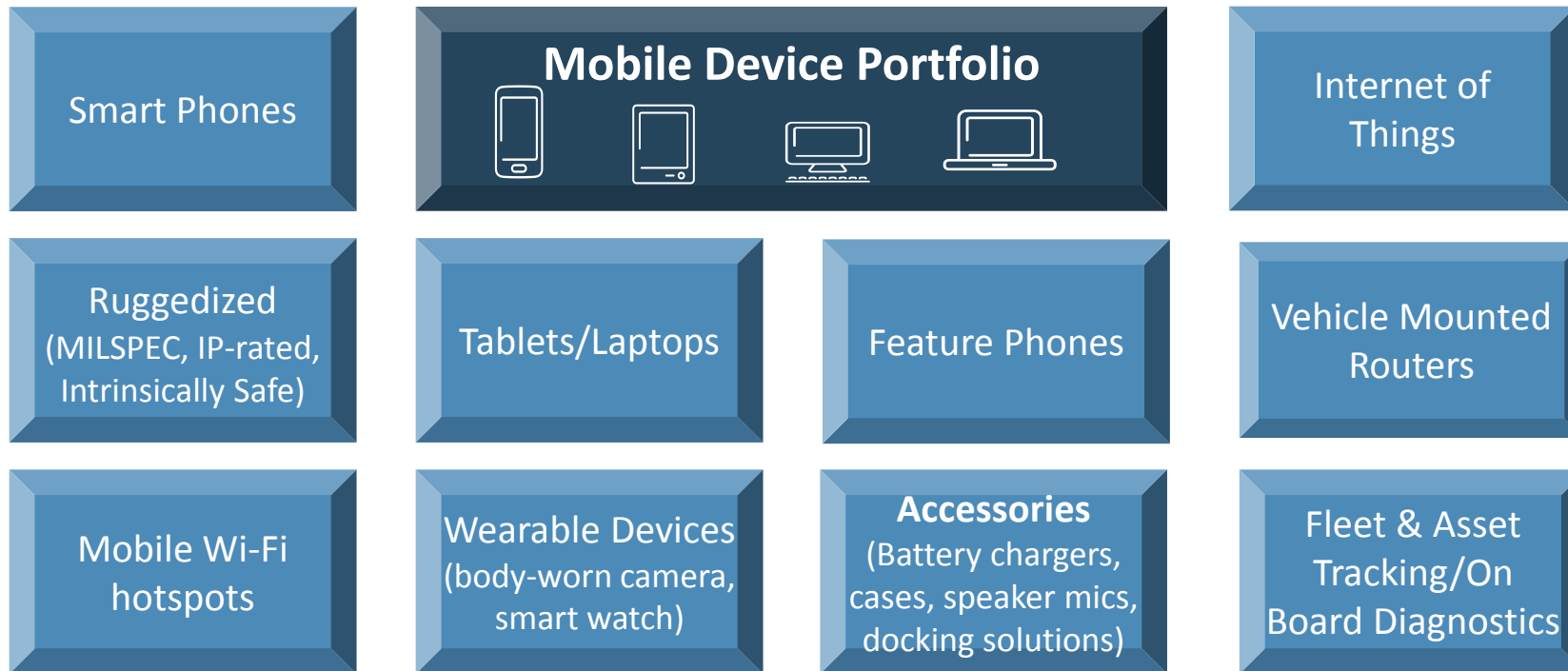
Mutual aid priority management for incident response

Cybersecurity

Security Operations Center for FirstNet

Uses AT&T's global cybersecurity assets

Benefits of FirstNet: Devices

We offer access to an industry-leading catalog range of price points. Choose from LTE devices, purpose-built rugged units, and the world's most popular smart devices and tablets-specifically suited to the needs of first responders and public safety.

Smart Phones	**Mobile Device Portfolio**	Internet of Things
Ruggedized (MILSPEC, IP-rated, Intrinsically Safe)	Tablets/Laptops	Feature Phones	Vehicle Mounted Routers
Mobile Wi-Fi hotspots	Wearable Devices (body-worn camera, smart watch)	**Accessories** (Battery chargers, cases, speaker mics, docking solutions)	Fleet & Asset Tracking/On Board Diagnostics

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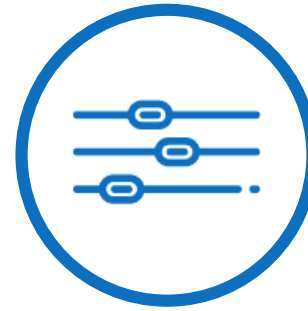# FirstNet Solution Overview

ICAM

Single Sign-On capability across all FirstNet applications plus agency applications
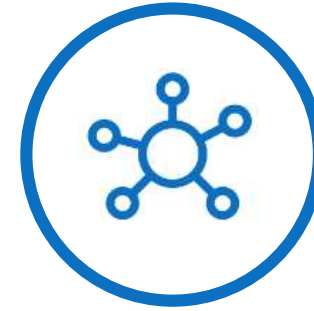
FirstNet App Store

Shows only security audited apps from trusted vendors

Can integrate with agency MDM/MAM

Local Control

One stop web tool for managing user rate plans, priority levels, PTT groups, ICAM authorizations and more

Public Safety Home Page

Unprecedented visibility into network status and more

ICAM: User Experience For Public Safety

One touch mobile Single Sign-On

Federated Single Sign-On

Biometric or other multi-factor authentication
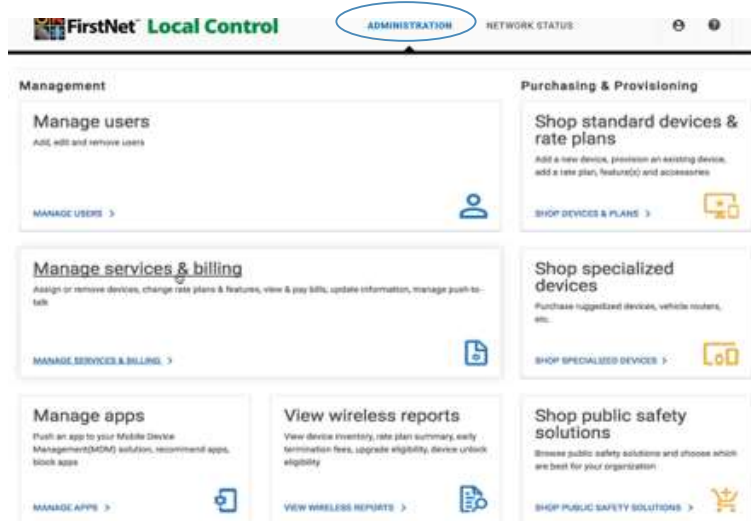
End user authentication with advanced encryption

Identity Management (IdM)

Derived Credentials for Common Access Card (CAC) and Personal Identity Verification (PIV) card solutions
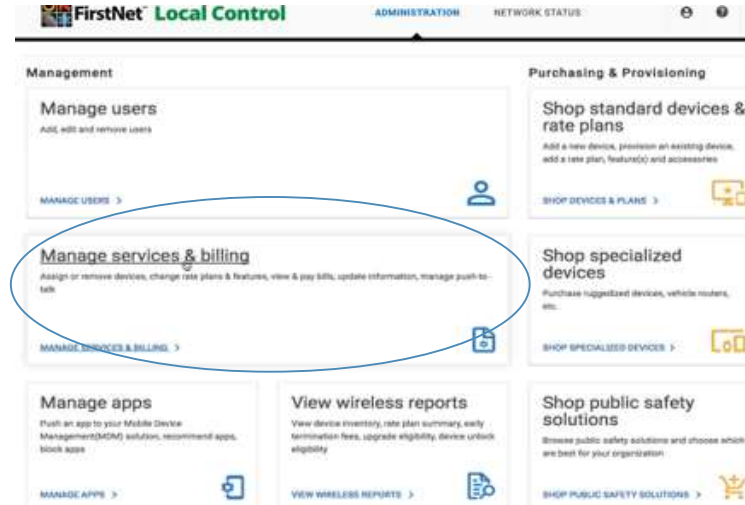
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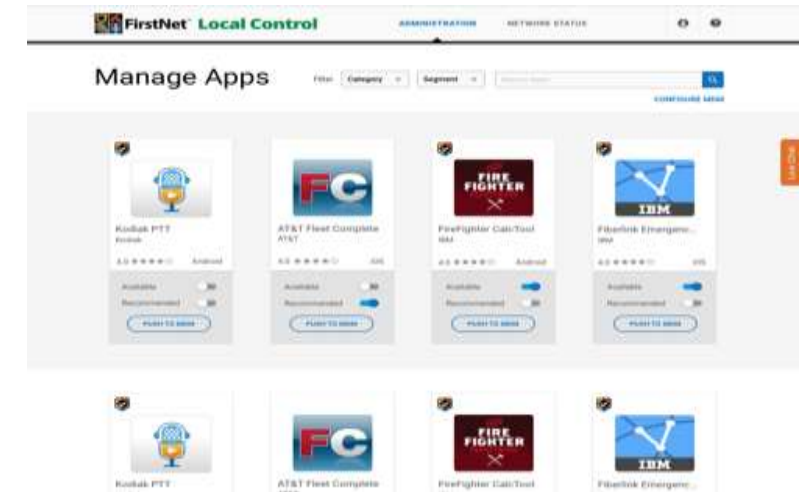# Benefits of FirstNet: Local Control- Administrative

Administrative

The Local Control landing page serves as a central hub for managing administrative tasks:

- FirstNet applications
- Reports
- Shop for rate plans
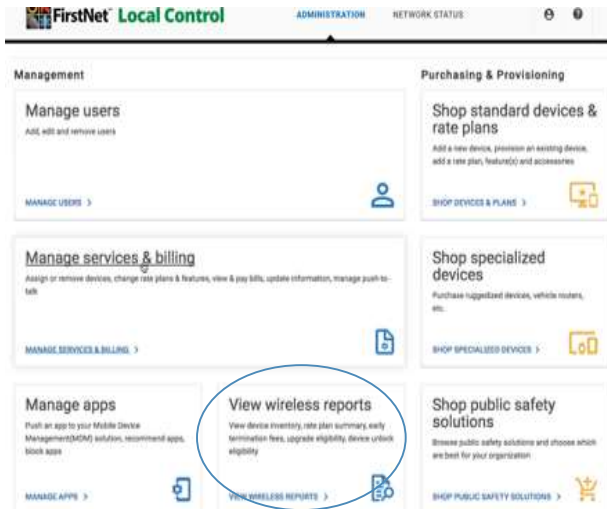- Devices and applications

Manage services & billing

- Review a bill
- Pay a bill
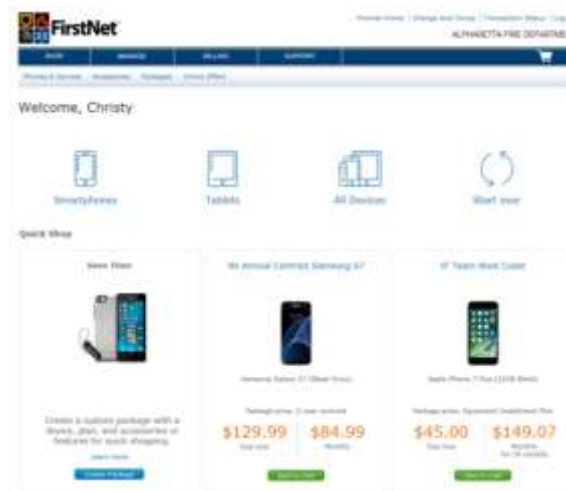- Update billing information

Manage apps

- Search/Filter all apps
- Push app to Agency MDM
- Recommend an app
- Block an app
- Drill down into detail

Benefits of FirstNet: Local Control- Administrative

View wireless reports

- Device inventory
- Rate Plan Summary
- Early Termination Fee
- Upgrade Eligibility
- Device Unlock Eligibility

Shop standard devices & rate plans

- Order stock mobility devices
  - Smart Phones
  - Tablets
  - All Devices
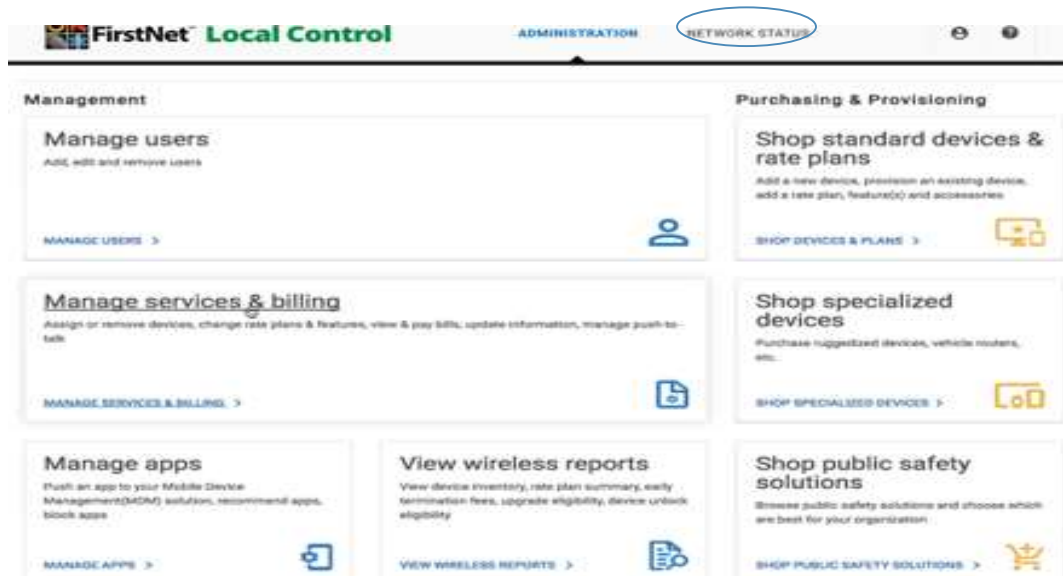 - Rate Plans

Shop specialized devices

- Order special devices and accessories
  - Tablets
  - In Vehicle
  - Accessories

Shop public safety solutions

- Enhanced Push to Talk
- Box: securely store and share information in a highly secure manner
- Fleet Complete – track and communicate with agencies, vehicles and assets

Benefits of FirstNet: Local Control-Network Status

Network Status

- From **Network Status** the agency has vital information for managing critical incidents.
- Enter an address and obtain real-time graphical representation of local network health and site conditions:
  - Alerts
  - Road traffic conditions
  - Weather conditions
  - Network status

Incident Management Interface

- Authorized agency administrators can locally control FirstNet primary users priority by selecting one of three levels of QPP based on a user's role and needs.
- These priority levels can be changed at any time through the online account management interface.

FirstNet Solution Overview

App Developer Program

Foster innovation and interoperability in public safety mobile apps

APIs for FirstNet specific features

Solutions

First-party options for key services like PTT, mobile VPN, messaging, LBS and more

Or bring your own apps

Training

Public safety solution specialists to educate agencies on how to maximize their use FirstNet services

Support

Dedicated 24 x 7 x 365 FirstNet mobility customer care desk based in the US

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Dedicated First Responder Support

Dedicated Support

- Single FirstNet number

- Technical Support Available 24x7x365

- US-based representatives

- International support line for US Territories

- Fully staffed and available starting in June 2017

Emergency Disaster Support

- Disaster event is confirmed and emergency message is turned on in the IVR system

- First Responder dials FirstNet helpdesk

- Caller confirms emergency incident and is routed to a FirstNet Helpdesk agent

- FirstNet helpdesk agents resolve issues and engage on-call resources

User Types

Primary Users

Fire
Police
Rescue

Today

Extended Primary Users

Hospitals
Utilities
Transportation

December 2017 Planned

Individual Paid Users

Users for a primary agency, but maintains service responsibility
e.g. - Volunteer, BYOD

December 2017 Planned

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Arizona FirstNet Rate Schedules

Device Type	Device Name	Cost
Smartphone	iPhone 6S 32GB	$0.00
Smartphone	iPhone 7 32GB	$49.99
Smartphone	iPhone 7 Plus 32GB	$169.99
Smartphone	Samsung S7	$49.99
Smartphone	Samsung S8	$249.99
Basic Phone	Sonim XP5	$0.00
Smartphone	Sonim XP7	$199.99
Mobile Router	Cradlepoint IBR-900	$899.00
Mobile Router	Sierra Wireless MP70	$899.00

Rate Type	Service	Cost
Data Only	Unlimited	$37.00
Smartphone	Unlimited w/o tethering	$40.00
Smartphone	Unlimited+Tethering	$54.40
EPTT Only	PTT + 911	$18.99

To take advantage of the Arizona rates, agencies must be a member of the Arizona State Purchasing Cooperative. For information on joining the COOP:

- Statewide Procurement Cooperative: https://spo.az.gov/procurement-services/cooperative-procurement

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Acquiring FirstNet

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FirstNet Value Proposition

Availability Operability Innovative

FirstNet™

Q&A

FirstNet™